

## PATENT CLAIMS

1. An explosive composition comprising RDX Type I, a polyacrylic elastomer and a plasticizer,  
characterised in that the RDX crystals represent a proportion in the range 88-96%  
5 by weight of the composition, and that the RDX crystals comprises a portion of  
coarse crystals with an average crystal size in the range 50 to 250  $\mu\text{m}$  and a portion  
of finer crystals with average crystal size in the range 2 to 30  $\mu\text{m}$ .
2. An explosive composition comprising RDX Type I and HMX, a polyacrylic  
elastomer and a plasticizer,  
10 characterised in that the explosive crystals represent a proportion in the range 88-  
96% by weight of the total composition, that the RDX crystals comprises a portion  
of coarse crystals with an average crystal size in the range 50 to 250  $\mu\text{m}$  and a  
portion of finer crystals with average crystal size in the range 2 to 30  $\mu\text{m}$ , and that  
the HMX crystals represent a proportion in the range from 5 to 20% by weight of  
15 the explosive crystals in the composition.
3. An explosive composition according to claim 1 or 2,  
characterised in that the explosive crystals represent from 90 to 94% by weight and  
preferably from 91 to 93% by weight of the composition.
4. An explosive composition according to claim 1 or 2,  
20 characterised in that the coarse portion of the RDX crystals comprises crystals with  
an average size in the range 60 to 170 $\mu\text{m}$ , preferably in the range 60-90 $\mu\text{m}$ , and that  
the fine portion of the RDX crystals has an average size in the range 5-20 $\mu\text{m}$ ,  
preferably 12-18 $\mu\text{m}$ .
5. An explosive composition according to claim 1 or 2,  
25 characterised in that the coarse portion of the RDX crystals represents from 25 to  
75% by weight, preferably from 35 to 65% by weight and more preferably from 44  
to 56% by weight.
6. An explosive composition according to claim 1 or 2,  
characterised in that the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054,  
30 and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl  
pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP).
7. An explosive composition according to claim 2,  
characterised in that the portion of HMX crystals represents from 5 to 20% by  
weight, preferably from 5 to 15% by weight and more preferably from 9 to 11% by  
35 weight of the total quantity of explosive crystals in the composition.

8. An explosive composition according to claim 2, characterised in that the HMX crystals have an average size in the range from 2 to 30 $\mu$ m, preferably from 5 to 20 $\mu$ m and more preferably from 8 to 14 $\mu$ m.
9. An explosive composition produced in a water-slurry process, characterised in that it comprising 88-96% of a coarse-grained and fine-grained RDX Type I and a binder system consisting of a polyacrylic elastomer and a plasticizer, and where RDX is present in a proportion of relatively coarse-grained and a proportion of fine-grained crystals.
10. An explosive composition produced in a water-slurry process, characterised in that it consists of 88-96% of explosive crystals and a binder system comprising a polyacrylic elastomer and a plasticizer, where the explosive crystals are a mixture of RDX crystals of Type I and HMX crystals, and where RDX is present in a proportion of relatively coarse-grained and a proportion of fine-grained crystals.
11. An explosive composition according to claim 9 or 10, characterised in that the proportion of explosive crystals represents from 90 to 94% by weight and preferably from 91 to 93% by weight of the total composition.
12. An explosive composition according to claim 9 or 10, characterised in that the coarse portion of the RDX crystals comprising crystals with an average size in the range 60 to 170 $\mu$ m, preferably in the range 60-90 $\mu$ m, and that the fine portion of the RDX crystals has an average size in the range 5-20 $\mu$ m, preferably 12-18 $\mu$ m.
13. An explosive composition according to claim 9 or 10, characterised in that the coarse portion of the RDX crystals represents from 25 to 75% by weight, preferably from 35 to 65% by weight and more preferably from 44 to 56% by weight.
14. An explosive composition according to claim 9 or 10, characterised in that the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054, and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP).
15. An explosive composition according to claim 11, characterised in that the proportion of HMX crystals represents from 5 to 20% by weight, preferably from 5 to 15% by weight and more preferably from 9 to 11% by weight of the total quantity of explosive crystals in the composition.
16. An explosive composition according to claim 11, characterised in that the HMX crystals have an average size in the range from 2 to 30 $\mu$ m, preferably from 5 to 20 $\mu$ m and more preferably from 8 to 14 $\mu$ m.